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HEAD START EVALUATION AND RESEARCH CENTER, THE UNIVERSITY OF CHICAGO. REPORT B, MATERNAL ANTECEDENTS OF INTELLECTUAL ACHIEVEMENT BEHAVIORS IN LOWER CLASS PRESCHOOL CHILDREN.

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The purpose of this research was to determine to what extent young lower class Negro children's actual achievements in the middle class school setting are influenced by maternal behavior and attitudes. Ninety Negro children, from 53 to 66 months of age, plus their mothers, were selected as the research sample. Interviews were conducted with the mothers to discover and assess their behaviors considered relevant in influencing the school performance of their children. The middle class school setting in which the children were placed was a summer preschool program. During this program the ability of the children was tested and rated. These measures of the children's achievement were interrelated to the maternal behavior data. It was found that mothers with high maternal individuation (that is, mothers high in active and analytical behavior) had a more significant positive influence on the achievement of their children. Two other maternal behaviors that appeared to contribute significantly to their children's achievement in school were (1) open communication between mother and child and (2) degree of social isolation of the mother. (WD)

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B. Maternal Antecedents of Intellectual Achievement Behaviors in Lower Class Preschool Children

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The principal aim of this research was to determine part of the process by which young lower class Negro children's actual achievements in the middle class school setting are influenced by behaviors and attitudes of their mothers. An implicit assumption of this research was that maternal and child behaviors within a relatively homogeneous group such as the lower class Negro ghetto community could be differentiated, and that these behaviors would have psychological significance.

1. Problem

The volume of research literature directed at prediction of children's achievements from parental variables is small. Possibly, the most important reason is the relative absence of theories of either parent or child behaviors which could be adapted to study of the socialization of young children's achievements (Sigel, 1956; Crandall, 1963). In this study, the concept maternal individuation was introduced as an important predictor of the level of these preschool children's achievements.

A related problem has been the interpretation of the results of children's intelligence tests. Earlier models for the study of children's achievement behaviors distinguished between a child's innate ability, as measured by standard intelligence tests, and his actual school achievements, as measured by standard achievement tests or achievement ratings. From such models came the concept of

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the "under" or "over achiever. Parents were viewed primarily as positive or negative influences upon the motivational determinants of children's actual achievements. Recent studies have indicated, however, that situational and environmental factors contribute significantly to the results of intelligence tests (Davis, 1948; Eells, 1951; Hunt, 1961; Deutsch, 1963; Bloom, Davis, and Hess, 1965). It has been generally concluded that, particularly with regard to young minority group children, the results of intelligence tests might best be viewed as cumulative achievements to date, rather than approximations of innate ability. Furthermore, there is some indication that parental variables will contribute to the cognitive or intellectual aspects of these children's achievements behaviors, as well as to their motivational determinants.

Parental variables which have been identified in this regard include: a high level of verbal interaction between adult and child (Milner, 1951); maternal acceleration, in terms of the mother's specific early concern with, and encouragement of, her child's intellectual development (Moss and Kagan, 1958); low maternal nurturance with regard to girls, but not boys (Crandall, 1967), more permissiveness with regard to limits (Cross, 1965; Busse, 1967) and early sexual curiosity (Rau, 1964) and, generally speaking, greater verbal stimulation and specific informational input during infancy and childhood in the home between mother and child, and more registered investment in higher achievement by the child in problem solving tasks (Dave, 1963; Bing, 1964; Stodolsky, 1965; Olim, 1965; Brophy, 1967).

Bear, Hess, and Shipman (1966) found that the Negro mother's sense of potency with regard to her ability to influence the school

and also the tendency to use informative or instructive statements with regard to the child's potential preparation for the first day of school were positively associated with higher Binet I.Q. scores and overall confidence in the testing situation. This same tendency to utilize instructive statements has been found to be associated with these children's learning in a structured mother-child interaction situation (Hess and Shipman, 1965). As partial explanation of these and similar findings, Hess and Shipman have argued that the constriction of the experimental alternatives within the macroscopic lower class Negro ghetto community is reflected also in the microscopic mother-child unit. Such a mother being unaccustomed to consideration of alternatives in problem-solving, does not teach this approach to her child, an approach typically essential to success in the middle class school system.

With the exception of the work of Hess and Shipman, however, there are still relatively few achievement studies which relate the variables and measures of the psychological home environment to the experimental background of the population sampled. Emphasis in the present study is derived from the approach of Hess and Shipman. Maternal behaviors which could stimulate productive problem solving were first identified and then it was predicted that these would be associated with the level of these children's achievements. It was also argued that the subcultural experiences of mothers and children within the Negro ghetto are such that it is particularly appropriate to focus on the problem of which maternal behaviors would be more intellectually stimulating within this group.

Some of these experiences have been identified by several authors (Moynihan, 1966; Rainwater, 1965; Clark, 1965). They have emphasized the constriction of these mothers' perception of alternatives due to such factors in the lower-class Negro ghetto as (1) continued and sustained effects of poverty, (2) frustration and depression at discrimination, (3) a realistic sense of impotency in the face of crime and vice in the ghetto, and most important, (4) disruption of the family in a situation in which as high as fifty percent of the fathers may be either absent or relatively ineffectual as providers of either financial or emotional support in the home, and in which mothers with children under age six constitute forty-one percent of the non-white labor force. Some preliminary study of the resultant behaviors of these Negro mothers suggests that:

> "The lower-class Negro mother has a difficult life and sees herself as responsible for the rearing of her children, with the assistance of neither a stable husband nor a friendly society. She feels that she must suppress children's internal impulses and that she must shield them from the threatening outside world. She cannot conceive of children's potential for developing inner control. Children are seen as objects to be carefully protected when young and helpless and then controlled, shielded, and suppressed as they grow older."[1]

Hence, the social realities of the lower-class Negro ghetto get translated into the cognitive and emotional experience of its individual members. In this instance, concepts of the mothers would possibly be functional to these children's achievements in school.

With regard to their cognitive behaviors, it has been found that lower-class Negro mothers are more likely to produce a higher

[1]N. Radin, The child-rearing attitudes of disadvantaged Negro mothers and some educational implications, J. Negro Educ., 34, 1965, 145.

number of relational-contextual responses on the Kagan Conceptual Style Test and also a greater number of nonscorable responses on the Adult Sigel Sorting Task, than middle-class Negro mothers (Hess and Shipman, 1966b; Shipman and Hess, 1965).

Cognitive personality theorists such as Kelly (1955), Klein (1958), Harvey, Hunt, and Schroder (1961) and others have suggested that the central dimension in the relation between cognition and personality functioning is the active-analytical versus passive-global dimension. Bernstein (1961) has demonstrated that a restricted, as opposed to elaborated, linguistic code is more characteristic of members of the lower-class community. If the social experiences of the individual members of the lower-class Negro ghetto act as previous research and other case study materials suggest, the more concrete, passive-global style of communication will be predominant (Davis, 1941; Kardiner, 1951). Conversely, however, a more active analytical approach by the mother to experiences of her child, especially those which pertain to learning in school, could be functional to his achievements. In the present study, behaviors presumed associated, on the basis of theory and previous research findings, with the more active, analytical approach were subsumed under the concept <u>maternal individuation</u>. These behaviors would be associated with (1) the concepts used by the mother in responding to specific interview items; (2) the application of these to conceptualization of her child as a person; (3) and to handling of typical child rearing problems. The influence of these behaviors upon the child would be threefold: (1) directly in terms of pressures for his school

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achievement; (2) directly in terms of giving credence to his sense of self-esteem; but most important, (3) indirectly in terms of engaging the child in a type of interactive process in his earliest environment which would produce more competent behavior in the next one encountered: the school setting.

Specifically, therefore, the three major hypotheses of this study were:

(1) Maternal variables would contribute significantly to the prediction of lower class Negro preschool children's actual school achievements.

(2) Maternal individuation, a cognitive maternal variable, will be more predictive of these children's level of achievement than primarily non-cognitive maternal variables such as warmth towards the child or social interaction of the mother.

(3) Children of mothers with higher levels of maternal individuation will demonstrate greater independence or autonomy within the school setting, than children of mothers of lower levels of maternal individuation.

Hypothesis I states that prediction of these children's actual achievements in the school setting will be associated with maternal behaviors of mothers in the lower class Negro ghetto. This has been a prevalent assumption, but has rarely been formulated into a testable hypothesis. Hypothesis II states that the more instructive or analytical dimensions of maternal behaviors will be more important to these children's competency in the school

setting than the expressive dimensions. Specifically, teaching disadvantaged children how to solve problems relevant to their own experiences will be more crucial to their achievements in school than other maternal behaviors which are less directly associated with active problem solving as such. Hypothesis III states that mothers who engage in such instrumental behaviors will have children who seem more independent and autonomous in problem solving situations in these mothers' absence, than mothers who do not. Such children will appear more confident, and will have less anxiety about taking achievement tests.

2. Method

Since the major problem of this research was to determine the direction and kind of influence of selected maternal behaviors on the level of the lower class Negro child's achievements, the initial issues of the study included: (1) selection of an appropriate sample; (2) identification and measurement of the relevant maternal behaviors; and (3) selection of appropriate measures of these children's achievements. Each of these issues will be considered.

a. The research sample. The sample for this research was selected from a total population of 153 children and their mothers who were currently enrolled in a summer (1965) Head Start program in the urban Chicago area. From initial screening of the population, ninety children and their mothers were eligible for the present study. In the final sample there were forty-five boys and forty-five girls. The mother of each child was considered to be the woman with whom the child resided who was primarily responsible for decisions regarding the child's daily care and welfare.

Although initially, the index of social status was a prestige rating of the occupation of the family's principal wage earner, using Bevode McCall's Index of Occupational Status Characteristics, families used in this study also met other criteria for lower status social position. Over fifty percent of the parents were born in southern states. The average family income was between $4500-5000 per annum, but this figure applied to a family of six: two adults and four children, with the average monthly rental being between $105-120.00.

As primary emphasis was to be upon the role of selected maternal behaviors for the disadvantanged child's achievements, no child with identified severe medical or emotional problems was included in the present sample. The ages of these children ranged from 53 to 66 months (mean age = 60.3; s.d. = 3.6), and their Stanford Binet I.Q. scores were comparable to those found with other lower income groups in urban areas (mean I.Q. = 92.5; s.d. = 13.1; range = 58-129). The mean age, educational level, and number of children of the mothers were 31.4 years (s.d. = 7.2), 10.7 years (s.d. = 1.7), and 4.0 (s.d. = 1.9), respectively. Table 1 presents the association between father absence and working mothers in the present sample, based on a total sample of 90.

	Father Present	Father Absent
Mother working	43 (N=39)	19 (N=17)
Mother Not Working	31 (N=28)	7 (N=6)

Table 1

b. The maternal behaviors: selection and assessment

The seven independent variables of this study were assessed from maternal interview data collected by female middle class Negro interviewers trained by this researcher. Each variable was assessed from seven indicators. These indicators were primarily the self-reported behaviors of the mother. Using a procedure similar to that developed by Dyk and Witkin (1965), interview data were examined for the presence (+) or absence (-) of the identified maternal behaviors. The final rating for each of the seven scales was the sum of the plus indicators (a score of 1= all indicators coded minus (-)). The interview itself was originally designed by this researcher for a larger study (Hess, Kramer, Slaughter, 1966).

Maternal behaviors assessed in the study pertained to the following seven variables: (1) value for school achievement, (2) warmth towards the child, (3) social interaction of the mother, (4) concepts used by the mother, (5) individuation of the child's personality, (6) cognitive controls used with the child, and (7) cooperation with the interviewer. The first three variables have been found to be associated with middle class children's achievements (Crandall, 1963; Harris, 1961; Kornrich, 1965) and so were reintroduced in the present study. Variables four to six comprised maternal individuation, the concept used in the study to refer to those maternal behaviors which could be cognitively stimulating to the child. The variable, cooperation with the interviewer, was introduced as an important control variable, since all the variables were assessed from interview data. The variables and indicators are presented below.

(1) value for school achievement

1. The mother finished high school at least, versus	The mother did not finish high school.
2. The mother hopes her child will finish college, and states she expects him to finish high school at least, versus	The mother hopes her child will finish high school but does not expect him to.
3. The mother reports belonging or having belonged to the local school PTA or other such organization(s) in the school, versus	The mother reports no participation in any school activities.
4. The mother reports having aspired to some occupation which would take training beyond high school, versus	The mother does not report having aspirations for professional work.
5. The mother emphasizes that she has told her child that school is a place to learn, versus	The mother does not particularly emphasize school as a place to learn.
6. The mother gives some indication that she encourages this child in new learning at home, either by taking pleasure in his school work and adjustment to school, and/or in the kind of games and activities they participate in together, versus	The mother does not now push her child towards learning which could be helpful to him in the school setting. Unlike the other mother, she is also not likely to see herself as an agent in his future success.
7. The mother sees this child as being capable of a high level of school achievement in that she describes him as being more intelligent or intellectually inquisitive than other children, versus	The mother does not see this child as being particularly more capable of school achievement than other children.

(2) warmth towards the child

1. The mother states that she believes she is close or very close to her child, versus	The mother states that she is somewhat close, or not too close to her child.
2. The mother reports that she rewards her child for good behavior, usually with expressive gestures such as a hug or kiss, or with a sincere thank you, versus	The mother reports rewarding her child primarily with material items such as candy, money, or toys. Any other gestures of affection are incidental as the mother believes the child prefers the former.
3. The mother reports that she believes understanding, consideration or friendliness to be important qualities for her child to develop as he grows older, versus	The mother does not specifically emphasize these qualities for her child to develop as he grows older.

4. The mother reports that she enjoys playing with her child, and that she encourages play between herself and him, versus	The mother does not report encouraging or enjoying play between herself and her child.
5. The mother reports that she wants to be closer to her child than her own mother was with her, or at least as close, versus	The mother does not report any desire to experience more closeness with her child or as much as she had with her own parents.
6. The mother describes her child primarily using positive adjectives or adjectivial phrases, versus	The mother is likely to use negative adjectives and phrases in describing her child, even when her intent is to praise him. She may also praise him by reason of the absence of some behavior rather than the presence of another.
7. The interviewer reported experiencing this mother as a warm, friendly or affectionate person, versus	The interviewer does not report experiencing this mother as a warm person.

(3) social interaction of the mother

1. The mother reports that she regularly attends church more than twice a month, versus	The mother does not report attending church at least twice a month.
2. The mother reports working at a job regularly--more than twenty hours a week, versus	The mother does not report working regularly.
3. The mother reports that she belongs to one or more local community groups such as block clubs or church groups which she meets with regularly, versus	The mother does not report belonging to such local community groups.
4. The mother reports membership in groups whose influence is more likely to extend beyond the immediate community, such as the NAACP, versus	The mother does not report membership in any group whose influence extends beyond the immediate community.
5. The mother reports that she holds or has held, some responsible leadership position in a community group, versus	The mother does not report currently holding, or having held, a leadership position in some community group.
6. The mother reports some racial discrimination in regard to herself or members of her family, versus	The mother having faced no discrimination because of her or her family's ethnic identity.
7. The mother describes an active day in which the members of the family function as a scheduled unit with regard to responsibilities, versus	The mother describes a day which is quite routine, and in which the family members tend to go in separate, undefined directions.

The following variables focus more on the analytical dimensions of the mothers' behaviors. These behaviors could be, according to previous theory (Hess and Shipman, 1965; Harvey, et.al., 1961; Bernstein, 1964; Wallach, 1962) and research (Hess and Shipman, 1966; Bear, Hess, and Shipman, 1966), more cognitively stimulating to the child.

(4) concepts used by the mother

1. The mother voluntarily considers alternatives in the solution of some hypothetical child-rearing problems, versus	The mother appears to see only one "right" solution to whatever the problem, with little or no reference to alternatives.
2. The mother can assume an attitude of the mere possible where indicated, and plan ahead to future events and possible courses of action, versus	The mother is not oriented toward planning for the future, either for herself, or the members of her family.
3. The mother has perspective upon the experiences of herself and her family in the present and past and uses this to solve problems presented to her, versus	The mother has little perspective upon direction of her own life or the lives of the members of her family.
4. The mother can compare two items or classes of events on demand, versus	The mother has difficulty comparing any two items or classes of events.
5. The mother thinks in terms of the age-appropriateness of her child's behaviors and so does not see him as little more than a miniature adult to whom she responds, versus	The mother does not think in terms of the age-appropriateness of her child's behaviors, nor of her responses to him.
6. The mother is usually able to take the role or position of another, such as family members or the interviewer, and does not assume that what she states is easily or always understood, versus	The mother appears to assume there is little or no need for any explanation to others.

(5) individuation of the child's personality

1. The mother sees this child as quite distinct from other siblings in the family and so characterizes him very definitely on more than one personality trait, versus	The mother reports that she sees this child as being just like all other children in the family, and may make a point to treat him as such.

2. The mother anticipates that this child will differ in some ways from other children in preschool and kindergarten, versus	The mother does not anticipate that her child will differ, either positively or negatively, from other children in preschool and kindergarten.
3. The mother envisions her child as being quite capable of being independent as indicated by her pleasure in seeing him do things for himself, versus	The mother tends to see her child's behavior primarily in terms of whether it pleases or displeases her, rather than in terms of his own development.
4. The mother's description of her child's interests and activities distinguish him readily from those of other children, versus	The mother's descriptions of her child's interests and activities are not specific enough to indicate that she herself readily knows what his particular interests are.
5. The mother's report of her child's behavior suggests that this child has few symptoms which could indicate emotional problems, versus	The mother's report of her child's behavior does indicate that this child has several such symptoms.
6. The mother's description of some of her child's characteristic moods distinguish him quite readily from other children, versus	The mother's description of her child's characteristic moods does not distinguish him well from other children.
7. The mother keeps a regular schedule for this child; in her absence she has someone to care for him, versus	The mother does not give any indication of keeping a regular schedule for this child, nor of having some mature person care for him in her absence.

(6) cognitive controls used with the child

1. The mother reports having discussed with her child what to expect or to anticipate in preschool with regard to teacher, other children, new activities, and so forth, versus	The mother reports telling her child very little about what to expect in preschool. She either focused upon what he should do, or told him nothing at all.
2. The mother reports being an agent in her child's awareness of his own ethnic identity, or that she plans to be when he is older, versus	The mother does not report being or planning to be, a positive agent in her child's awareness of his awareness of his ethnic identity.
3. The mother reports using primarily verbal controls to punish her child, versus	The mother reports using primarily physical controls to punish her child.

4. The mother emphasizes the importance of developing guidelines by her child to get along in the world, versus	The mother emphasizes little in the way of specific guidelines for her child in order to get along. Her emphasis may be upon passivity rather than active coping.
5. The mother reports having models for her child to emulate, versus	The mother reports having no models for her child to emulate.
6. The mother places some restrictions upon her child's behaviors such as in terms of his associates and activities, versus	The mother reports placing no restrictions in these areas.
7. The mother gives no indirect evidence of feeling out of control or having lack of control of her child's management, versus	The mother does not appear to feel in control of her child and his behaviors.

The final maternal individuation score was the mean rating of the last three variables. The seventh variable, cooperation with the interviewer, refers specifically to behaviors which were shown by the mother during the interview and for the sake of brevity will be presented. (These behaviors were primarily reported by the interviewer.)

c. The children's achievement behaviors: definition and assessment

The dependent variable in this study was the level of intellectual achievement attained by these preschool children. Evaluation of this was made from standard achievement situations, including several tests and ratings by school personnel. The following tests and ratings were used:

1) The Stanford Binet (Form LM): Only the index of mental age was used as a measure of these children's cumulative intellectual achievement to date. This test was individually administered to 89 of the 90 children in this study by trained psychometricians during the first four weeks of the summer program.

2) The Caldwell-Soule Preschool Achievement Inventory (PAT): This test was individually administered by classroom teachers during the first three weeks of the summer program. Since a partial score based on 49 of the original 152 items correlated .95 with the total test result, this partial score was used as the measure of these children's achievement in this study. The Caldwell-Soule PAT was specifically designed as a kindergarten readiness test for use with low income children. Principal component analysis suggested (Caldwell, 1966) that the following dimensions contribute to the child's final score: (1) concept activation, (2) independent action, (3) personal-social responsiveness (to roles in the community), and (4) associative vocabulary. Scores were available on 80 of the 90 children in the present study.

3) The Metropolitan Readiness Tests: These tests were group administered in the fall of 1965 to 81 of the 90 children in this study. These tests evaluated the children's readiness for using number and verbal concepts. In a recent study by H. Robinson (1965) retest reliabilty coefficients ranged from .91 to .95 on the subtests for urban disadvantaged children. In the present study only the child's number readiness was analyzed separately from his total score.

Several achievement ratings were also completed by classroom teachers, psychometricians, and observers of the children (present in the program during the entire summer program). These ratings were utilized in the present study because they specifically focus upon behaviors of the child which are frequently seen as more or less achievement oriented by school personnel. These ratings were summary scores of items derived from principal component

analyses of E. Ziegler's Behavior Inventory (Hess, Kramer, and Slaughter, 1966). Three factors rated by both teachers and observers were:

4) Achievement Orientation

5) Verbal-Social Participation

6) Independence

Two similar ratings were completed by the psychometricians: using the Stanford Binet face sheet rating scales.

7) Achievement Orientation

8) Confidence in Ability

Finally, both teachers and observers at the conclusion of the summer program predicted the level of these children's future grade point average, based upon observation of their summer performance. These ratingswere used as additional indices of these children's achievements to date.

9) Grade Point Achievement

d. Testing the hypotheses of this study

The general procedure for testing the hypotheses of this study was to determine the association between the maternal behaviors and the various achievement measures used. Specifically, a finding would have additional validity if it were to be consistent across all measures of these children's achievements. In the following analysis of these findings evidence for the reliability and validity of the maternal and child measures will also be presented.

3. Results

Generally, the results of this study were positive: maternal behaviors in the lower class Negro community were associated with the level of these preschool children's intellectual achievements.

The reliability of the maternal behavior scales was assessed by percent agreement between two raters who independently coded 18 (20%) randomly selected interviews. Reliability training, in addition to design of the original scales was completed on a separate set of similar maternal interviews obtained from another disadvantaged urban community. The average percent agreement over the 48 indicators was 0.825. Percent agreement over the seven scales ranged from .762 to .929. The mean number of disagreements per matched interview was 6.2.

Preliminary analysis of the seven interview scales indicated that (1) scores on the scales were generally normally distributed; (2) certain items contributed more towards a higher score on each of the seven scales than others. These items included indicators 1, 5, and 6 on scale I (value for school achievement); 3 and 6 on scale II (warmth towards the child); 6 and 7 on scale III (social interaction of the mother); 3 on scale IV (concepts used by the mother); 1,3,4, and 7 on scale V (individuation of the child's personality); and 2,3,and 4 on scale VI (cognitive controls used with the child), (3) no significant differences by sex of the child existed in either the distributions, mean scores, or percent of positive (+) indicators chosen among these maternal behaviors, and finally, (4) only one of the seven maternal variables was significantly associated with either the age, educational level, or number of children of the mothers: value for school achievement was associated .44 with mother's attained educational level ($P<.01$).

In summary, preliminary analysis of the maternal interview scales indicated that they could be reliably coded and that within this economically and ethnically homogeneous group mothers could

be behaviorally distinguished. Immediately, the issue of whether these maternal behaviors would have psychological significance was raised.

With regard to the measures of these children's achievements, girls tended to be slightly higher acheivers than boys on the standard achievement tests, but not the achievement behavior ratings. An intercorrelation matrix indicated that (1) achievement test scores of these children were highly intercorrelated and demonstrated the same pattern of association with the achievement behavior ratings, and (2) psychometrician, teacher, and observer ratings on the same variable were more highly associated than either teachers' or observers' ratings of different variables. Generally, the more specific the rating to the child's school achievements, as contrasted with achievement oriented behaviors as such, the higher the level of agreement between teacher, observer, and psychometrician's ratings. From these findings it was concluded that the measures utilized in the present study were viable indices of these children's intellectual achievement behaviors. This was particularly important to establish since only minimal reliability training and validation of these achievement measures was possible before these data were collected. Furthermore, no one measure of achievement of preschool children in general, or disadvantaged children in particular, has yet to be satisfactorily devised.

TABLE 2
RELATION OF MATERNAL VARIABLES TO THE LEVEL OF THE CHILDREN'S ACHIEVEMENTS

CHILD VARIABLES: VARIABLES-MATERNAL	BINET CA (N=90)	BINET MA (N=89)	PAT (N=80)	METRO NUMBER (N=81)	METRO TOTAL (N=81)	GRADE PT TEACHER (N=88)	GRADE PT OBSERVER (N=65)	ACH ORIENT TEACHER (N=90)	ACH ORIENT OBSERVER (N=89)	ACH O PSYMT (N=83)
Value for School Achievement	-.12	.24*	.21*	.20	.14	-.18	-.10	.20*	.02	.06
Warmth Towards the Child	-.02	.20*	.19	.07	.18	-.05	-.16	.04	.07	.10
Social Interaction of the Mother	.02	.25*	.31**	.24*	.11	-.12	-.25*	.17	.12	.03
Concepts Used by the Mother	-.02	.22*	.17	.16	.10	-.11	.02	.10	.01	.13
Individuation of the Child's Personality	.02	.30**	.30**	.19	.21*	-.22*	-.05	.14	.02	.14
Cognitive Controls Used with the Child	.03	.37**	.33**	.30**	.30**	-.34**	-.30*	.26*	.12	.26*
Maternal Individuation	.01	.38**	.34**	.31**	.28**	-.26*	-.17	.20*	.09	.23*
Cooperation with Interviewer	-.19	.05	.06	-.05	-.08	.01	-.12	.02	-.04	.03
Age of Mother	.11	.21*	.20	.16	.11	-.00	-.22	.12	.07	.07
Educational Level Attained by Mother	-.15	.06	.05	-.02	.07	.01	.04	-.04	.10	.10
Number of Children of the Mother	.04	-.05	-.08	-.05	-.19	.25*	.02	-.11	-.17	.11

**p < .01, *p < .05

The data in Table 2 present evidence in support of hypotheses I and II (p.6). Specifically, maternal behaviors, especially those which it is hypothesized will be more cognitively stimulating to the child, are associated with the level of these children's actual school achievements.

In a separate analysis children of mothers of higher levels of maternal individuation tended uniformly to receive a higher level of achievement on all achievement measures, than children of mothers of low maternal individuation, whether or not these mothers had (1) a higher value for school achievement, (2) more warmth towards this child, or (3) a greater amount of social interaction. (High maternal individuation = a score greater than 4.6; low maternal individuation = a score less than 3.1). Whether or not the mother worked or the father was present in the home did not, however, noticeably influence the level of these children's achievements.

The data did not support the third hypothesis of this study, that children of mothers with higher levels of maternal individuation would show more independence, than children of mothers of lower levels of maternal individuation. Teachers and observers did not see these two groups of children as noticeably different in the classroom setting. Psychometricians, however, did distinguish between the two groups of children on confidence in ability in the testing situation: children of high individuating mothers received a mean score of 5.02 (7 point scale), as contrasted with a mean score of 3.72 for children of lower individuating mothers (s.d.'s = 0.98 and 1.21 respectively; $t < .01$). Although there is certainly the possibility of the "halo effect" with regard to the psychometricians'

ratings, possibly these personnel were better equipped to evaluate this dimension of these children's behaviors than the other raters.

A separate principal component analysis of the seven maternal interview scales with a varimax rotation to a two factor solution was completed in a partial effort to interpret the psychological meaning of the scales. The variables warmth toward the child, cognitive controls used with the child, and individuation of the child's personality loaded .808, .793, and .660, respectively on Factor I and .160, .019, and .489 on Factor II. The variables social interaction of the mother, value for school achievement, and concepts used by the mother loaded .739, .705, and .595 on Factor II, and .050, .143, and .336 on Factor I. Examination of the items suggested that the first Factor I might be termed Openness of Communication between Mother and Child. It represents an important dimension of the maternal control system referred to by Hess and Shipman (1965), with an important addition. Mothers influence the achievement behaviors of their children by giving them relevant information and by achieving deliberately a certain degree of closeness or rapport, possibly so that this information might be accepted. In any case, the entire process involves actively engaging the child in a communicative process between mother and child. Factor II refers to the use by the mother of even the minimal positive resources in her community, including opportunities for work, recreation, and participation in school activities, in addition to her awareness of broader social issues. As such, Factor II might be termed Degree of Social Isolation of the Mother.

Introduction of the following variables into a multiple regression equation with Binet mental age as the dependent variable increased the multiple R to .442, significant at the .01 level (df = 1/85): cognitive controls used by the mother, value for school achievement, social interaction of the mother, and individuation of the child's personality. However, separate analysis of the residuals suggested that taken independently, only cognitive controls used with the child reached significance at the .01 level.

4. Conclusions and Implications

Maternal behaviors have been found to have a significant influence upon the achievements of lower class Negro preschool children. Specifically, maternal individuation, a concept developed for this research to describe the more active, analytical aspects of these mothers' behaviors, was associated with measures of these children's actual school achievements. The influence is reflected in different aspects of the children's achievement efforts, including (a) their initial cognitive abilities upon entrance into the school setting, (b) their behavior readiness for school, (c) their achievement efforts as seen by relevant school personnel, and (d) their continued level of performance upon entering kindergarten following a preschool Head Start program. There is some indication that the two important dimensions of maternal behaviors which contribute most to these children's achievements include: (1) open communication between mother and child, and (2) degree of social isolation of the mother. The extent to which the mother actively establishes this communication with her child, in particular, and the degree to which she utilizes even the minimal community resources available to her

own experiences both act to determine the level of her child's achievements. These findings are consistent with those of other researchers who have emphasized the importance of maternal behaviors in the development of children's cognitive abilities, most notably the work of Hess and Shipman (1965). Furthermore, the findings indicate that those behaviors which <u>are</u> relevant to these children's achievements parallel those found in middle class communities.

In regard to the maternal variables incorporated into this study, measures of these children's achievements in standard achievement test situations are more usable measures of their achievements than specifically achievement oriented behavior ratings. However, the more closely identified the ratings with prediction of these children's actual achievements in the school setting, the more likely they were to be usable. Limited preliminary training on the rating procedures perhaps contributed most to this finding, however. Further research is needed to determine if training in behavior ratings with this population could be productive of more results than those of the present study.

The findings are not consistent with those studies which emphasize the differential influence of maternal behaviors upon children's achievements depending upon the sex of the child. Girls in the present study, however, tended to perform more successfully in standard achievement test situations than boys, and mothers of girls at times demonstrated more of those behaviors found associated with higher levels of achievement, than mothers of boys. Generally though, these findings suggest that <u>at this age</u> maternal behaviors associated with higher levels of achievement in lower class Negro children do not significantly differ for girls or boys.

Another finding inconsistent with previous reports such as that of Moynihan (1966) is that the relation between father absence, number of children, age, and educational level of the children's achievements is insignificant. No association between any of these demographic variables and the present measures of these children's achievements was demonstrated in the study. With the lone exception of a .44 ($p < .01$) correlation between mothers' value for school achievement by their children and their own attained educational level, no association between any of these demographic variables and the maternal behaviors identified in this study was demonstrated. This finding suggests that within the lower class community more subtle factors operate to depress these children's level of academic achievement than simply the presence or absence of the father in the home, whether or not the mother works, or how many children she currently has in the household. In a subsidiary study, for example, mothers' value for school achievement correlated -.36 ($p < .01$) with their sense of potency with regard to influence of the schools, while warmth towards the child correlated -.24 ($p < .05$) and .23 ($p < .05$) with support for traditional educational values and negative attitude towards the teachers, respectively. The finding indicated that mothers who tend to project hostility onto the school are likely to be more supportive toward their preschool child. This material is presented in support of the position that further research to determine the association <u>between different maternal behaviors within this community</u> is crucial.

A major subsidiary finding of this research, therefore, is that maternal and child behaviors within an ethnically and economically homogeneous community such as the lower class Negro ghetto can be differentiated which have psychological significance. Certainly the maternal scales utilized in the present study are value-laden: it was assumed that what would be functional to children's achievements in the middle class community would also be functional to the lower class ghetto child's achievements. The data present some evidence in support of this assumption. In future studies other important maternal behaviors may be chosen for other reasons and found more crucial.

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